

Abstract

The present invention is a system and method for three dimensional machine vision including a projector and camera. The projector casts a structured light Quadratic Residue Bar Code on the surface to be mapped. The camera then images the surface. The projected image is shifted, and the process is repeated a number of times, according to the particular arrangement selected for the structured light Quadratic Residue Bar Code. The image data collected from this series of images is then processed by relatively simple matrix operations to determine the location of each camera pixel in three dimensional space.